WSF New Vessel Program

Presentation to the Transportation Commission

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Why New 130 Car/Passenger Vessels for WSF?

Why new 130-car sized vessels?

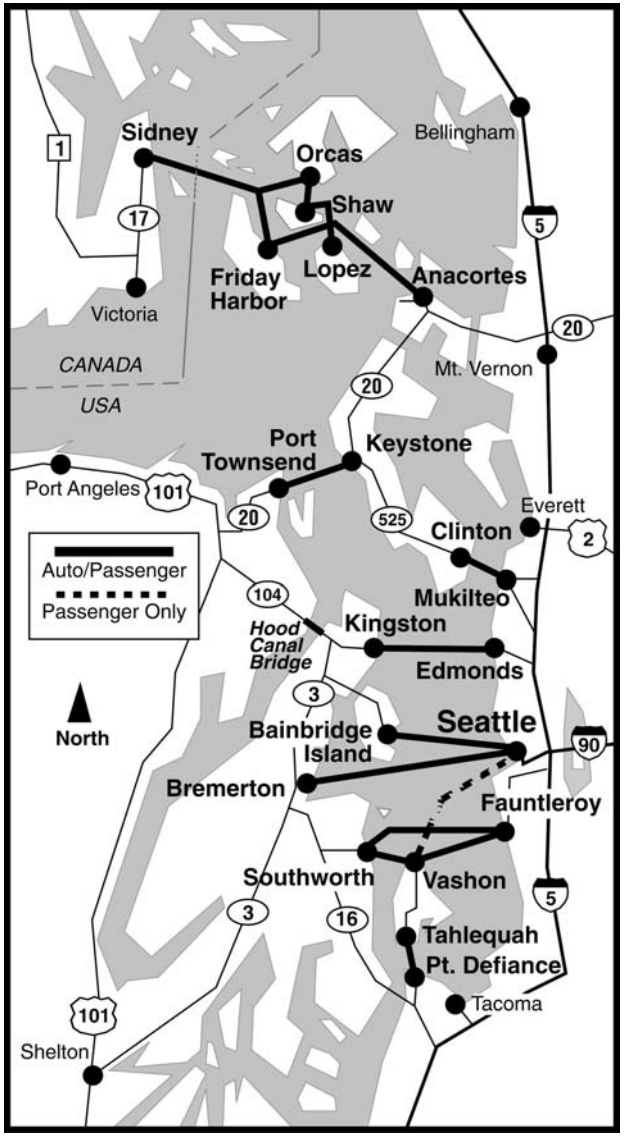
- **Best suited for short to medium length routes**
- **Adequate 17 knot speed to sail on any schedule in the system**
- **Platform for further equipment standardization in the fleet**
- **Supports fleet-wide flexibility of vessel assignments**
- **Allows smaller, slower vessels to switch to suitable routes**
- **Replaces old 65-car "steel electric" vessels, plus two others**

WSF's last large ferries:

- *MV Tacoma, MV Wenatchee, and MV Puyallup* were completed in 1997-98
- Auto/passenger capacity improvements for Seattle-Bainbridge and auto/freight improvements for Edmonds-Kingston.
- Fast, reliable service record. Popular with customers.
- Allowed vessel redeployment of other vessels to improve service on Seattle-Bremerton, Fauntleroy-Vashon-Southworth and in the San Juans.

How will the New 130 Car Ferries Strengthen WSF Routes and Schedules?

- One vessel will be assigned to Mukilteo-Clinton, to provide more truck and oversized vehicle capacity.
- Another vessel will be assigned to the San Juan Islands, providing additional vehicle capacity by replacing the smaller *MV Sealth*.
- A third vessel will be assigned to Seattle-Bremerton to improve service and customer comfort for heavy commuter sailings.
- A fourth vessel planned for Port Townsend-Keystone, to accommodate peak demand and improve truck capacity, allowing retirement of two old “steel electric” vessels.
- Older 130-car vessels and the *MV Sealth* will be redeployed to add capacity for Fauntleroy-Vashon-Southworth and to improve fleet-wide vessel backup. Two Evergreen State class vessels will be redeployed to the San Juan Inter-island service and to Point Defiance-Tahlequah, increasing capacity and allowing retirement of another “steel electric” vessel and the *MV Rhododendron*.



How is the Program Affected by the Keystone Terminal Discussion?

- Using a 130-car vessel on Keystone-Port Townsend requires moving the terminal out of Keystone Harbor, or combining harbor modifications with high performance rudders on the new 130 car ferries.
- The Keystone Harbor Study and further analysis will select the best route service strategy, including consideration of other service and vessel options or possible terminal relocation outside the harbor.
- If a new 130-car vessel is *not* assigned to Keystone-Port Townsend, then the fourth 130-car vessel would allow early retirement of another vessel, or service improvements elsewhere in the system.
- Deadline is late summer of 2005 for final decision on possible use of high performance rudders on new vessels.

How has the Legislature Chartered the New Vessel Program? - - - SHB 1680 (2001)

SHB 1680, enacted in 2001 after two years of legislative discussion, guides the program.

- Developed by WSF officials, legislators, staff, Puget Sound shipyards and naval architects, labor unions, and customer advocates.
- Vessels must be built in a shipyard in Washington State
- Interested shipyards will be "pre-qualified" to develop and submit *Technical Proposal* (at their cost) for vessel design based on **WSF Outline Specifications.**
- Shipyards' *Technical Proposals* will be submitted to and approved by WSF and unsuccessful proposers will receive $500,000 to partially cover cost of developing their *Technical Proposals*.
- Selection of successful shipyard to develop final design and construct vessels will not be by usual design-build "best value" evaluation but by "low bid."

What is the "design-build" procurement strategy intended to achieve?

Enlist shipyards and their naval architect partners to take **WSF Outline Specifications** and:

Each shipyard creates proposed vessel design and construction program suited to shipyard's strengths.

Each shipyard takes "ownership" of vessel design and construction program to produce better pricing of construction cost and reduce WSF exposure to change orders and shipyard claims during construction.

How has the Legislature Continued to Support the New Vessel Program? - - - 2003 Transportation Funding Package

The 2003 Transportation Funding Package took essential steps to begin the procurement laid out by SHB1680

- Appropriated $6 million in the 2003-05 biennium for the planning, shipyard selection and long lead-time material procurement process

- Approved expenditure of a total of $285 million over ten years for the design and construction of the four new ferries.

  See sources and uses detail in Appendix I

- Specifically designated $67 million of "Nickel Fund" expenditure for the construction of the third vessel in the procurement process.

In 18 Months WSF has made Solid Progress on Procurement Steps

Date	Accomplishment
December 2003	Issued Volume IA of the Prequalification Requirements to shipyards.
Feb – May 2004	Conducted Special Prequalification inspections of five Puget Sound shipyards.
March 2004	Issued Volume IB of the Phase I proposer information to the shipyards.
May 2004	Issued Requests for Proposals for Propulsion Systems to be supplied as “Owner Furnished Equipment”.
July 2004	Completed Special Prequalification Process finding three shipyards to meet the requirements.
October 2004	Received Standard Prequalification Information (including financial) from three shipyards.
October 2004	Propulsion System Proposals received from three national vendors.
November 2004	Issued Request for Proposals for Ship Service Diesel Generator Sets to be supplied as “Owner Furnished Equipment”.

The WSF Outline Specifications are Nearly Complete:

Extensive safety analysis conducted for design

- *Two* watertight compartments can be flooded without the vessel sinking.
- Designed to accommodate addition of safety equipment and systems over 60-year service life.

Designed for more efficient vehicle loading and passenger ease

- Wider vehicle lanes and gentler ramps

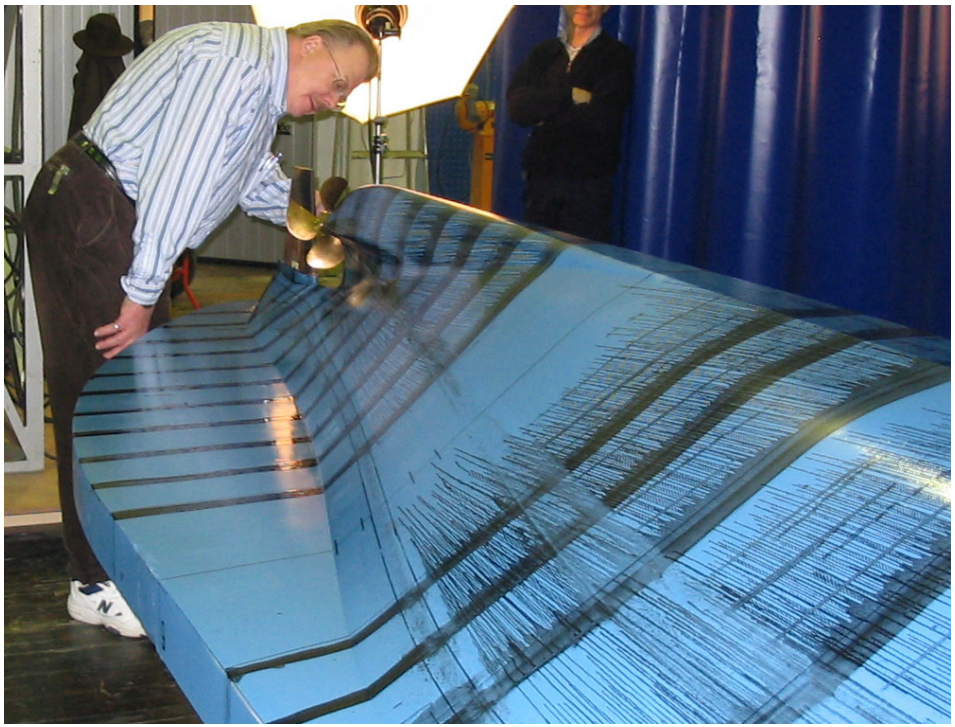
Improved passenger comfort, convenience and enjoyment

- Improved heating and ventilation
- More internal seating; flexible seating configurations
- Full compliance with Americans with Disabilities Act requirements including two elevators and other access features.
- Wireless internet support for passengers and ship's commercial services.
- Two passenger decks with sheltered observation areas

Lessons learned from ferry operations and previous construction and continuous involvement by operating and maintenance departments have led to more efficient, passenger-friendly design features.

A Highlight of the WSF Outline Specifications: An Efficient Hull

- Goals: Lower fuel consumption and operating cost; ability to achieve 17 knot speed requirement; minimize wake.
- Computer-tested hundreds of hull forms starting from *Issaquah Class* hull using computational fluid dynamics in association with Friendship Systems in Potsdam, Germany.
- Tank tested scale model hulls in state-of-the-art model basin, SSPA in Goteborg, Sweden.



- The new hull differs from the *Issaquah Class* hull: larger, wider and consequently heavier.
- Results: depending on rudder choice, may realize up to 18% propulsion power savings at 17 knots as compared to *Issaquah Class,* which will also reduce fuel costs.

Another Highlight of the WSF Outline Specifications: Install the Best Propulsion System

- To identify the best propulsion system, Glosten Associates undertook a Feasibility Study and evaluated available propulsion systems. The study recommended a diesel-mechanical propulsion system (similar to that used in the *Issaquah Class* vessels).

  > *"Based upon the weighted factor analysis and the life cycle cost, the diesel mechanical propulsion system similar to the current Issaquah Class propulsion system, is the leading candidate for the new 130 car ferry."*

- The commonality of the new vessel propulsion system with existing WSF vessels will provide benefit to WSF in training and maintenance.
- Propulsion procurement as "owner furnished equipment": makes construction coordination complex, but allows opportunity for federal funding for otherwise ineligible *("Built in Washington")* vessels.
- RFP for the propulsion system was issued last May. Three national vendors responded. Proposal evaluation is underway, and designation of the propulsion system vender/supplier is expected in January 2005.

Environmental Review is On-Going

- Vessel program has received from FHWA and FTA “categorical exclusions” under NEPA, and a determination of “no effect” under the Endangered Species Act.
- WSF is preparing a “checklist” under the State Environmental Policy Act (SEPA) process to consider environmental changes for operating new vessels compared to current vessels. Evaluation highlights will be:
  - ✓ **Air emissions**
  - ✓ **Propeller scour and wake wash**
  - ✓ **Discharges to water**
  - ✓ **Noise levels**
- Opportunities for public comment and participation in the environmental analysis begin this spring 2005. The SEPA evaluation is being supported by Elliott Bay Design Group and sub-consultants with special expertise and ship related environmental matters.
- Tribal consultations are planned during the public outreach period.

Prequalification of Shipyards is now in Final Stage.

- Shipyard prequalification presents a challenge because of lack of recent new construction in Puget Sound and limited financial capacity of Puget Sound firms seeking to participate.
- Five shipyards initially applied for prequalification.
- Three shipyards passed the Special Prequalification requirements for adequate facilities, personnel and shipyard experience.

  JM Martinac Nichols Brothers Todd Shipyard

- Three yards have submitted Standard Prequalification information, including financial information.
- Prequalification process expected to be completed in December 2004.
- Three or fewer players (depending on prequalification outcome and possible shipyard combinations) will likely go forward to Technical Proposal phase.

RFP will be Issued Shortly to Shipyards to Prepare Technical Proposals Based on WSF Outline Specifications

		Requirements for Successful Program Result	
	Steps	**WSF**	**Shipyard**
12/04	WSF Outline Specifications ready for issue to prequalified shipyards.	Outline Spec will contain all WSF requirements, including passenger and auto capacities, quality and standards requirements.	
1/05 to 11/05	Development of Technical Proposals by prequalified shipyards.	Conducts rigorous ongoing review of Technical Proposals during development to ensure they conform to Outline Specifications.	Shipyards utilize teams with adequate expertise to develop Technical Proposals (vessel design and specifications). Each shipyard expected to invest approximately one million dollars or more to produce a responsive and adequately detailed Technical Proposal.

		Requirements for Successful Program Result	
	Steps	**WSF**	**Shipyard**
11/05	Final Technical Proposals are submitted by each shipyard team to WSF.	WSF evaluates and approves Technical Proposals as appropriate. WSF invites shipyards with approved Technical Proposals to develop their bids.	
11/05 to 2/06	Estimating	WSF prepares its "engineers estimate" for the price of each Technical Proposal including observance of all contract requirements.	Each shipyard prepares its bid based on its approved Technical Proposal and all contract requirements.
2/06	Submission of Bids and Award of design/build contract.	WSF reviews bids for legal "responsiveness" and designates the low responsive bidder for award of the design-build contract in accordance with its Technical Proposal. WSF reimburses each shipyard $500,000 to defray part of the cost of developing its Technical Proposal.	Each Shipyard submits its bid for final design and construction of the vessels as described in its Technical Proposal.

		Requirements for Successful Program Result	
	Steps	**WSF**	**Shipyard**
2/06 to 12/06	Development of detailed design and drawings	Reviews and approves detailed design and drawings to ensure conformance to Outline Specifications and Shipyard's Technical Proposal.	Develops detailed design and drawings in accordance to its approved Technical Proposal.
12/06 to 6/10	Construction of vessels	WSF on-site Project Team conducts in-process inspection of construction work, tests and trials to ensure vessels are constructed in accordance with WSF approved shipyard design and drawings.	Constructs vessel in accordance with WSF approved design and drawings.
8/08 **4/09** **11/09** **6/10**	Acceptance and delivery	Acceptance and delivery takes place after all tests and trials have been completed.	Delivery of Vessel 1 Delivery of Vessel 2 Delivery of Vessel 3 Delivery of Vessel 4

When will Cost of the Vessels be Known?

- Budgetary estimates to date are based on a parametric comparison based on:
  - Actual costs from new construction experienced on Jumbo MKII ferry.
  - Scaled to meet size of new vessels
  - Adjusted for unique features of new vessels.
  - Escalated for inflation to expected construction dates for new vessels.
- A WSF “engineers estimate” for the vessels construction will not be prepared until shipyards’ “Technical Proposals” are approved.
- Recent steel price instability may or may not persist as source of price uncertainty. Approximately 6% of vessel construction prices is for the cost of buying steel; therefore if steel prices change 25%, change in vessel price will be less than 2%.

WSF Plans Proactive Programs Assure Quality and Cost-Disciplined Construction Program

WSF Project Team on-site at shipyard during construction of vessels	**The WSF new vessel Project Team will:**
• Project Engineer • Vessel Inspector Specialists • Project Staff Chief Engineer • Vessel Staff Chief Engineers • Project Master • Design Liaison Engineer • Contracts Compliance Officer • Project Administrative Staff	• Review and approve construction drawings • Conduct ongoing inspections of all shipyard work • Review and approve schedules and test specifications • Review and approve progress payments • Review and approve all contract deliverable documentation • Respond to all contract reports from shipyard • Administer contract changes • Observe all tests and trials • Observe sea trials • Sign off on correction of deficiencies • Determine when vessel is ready for delivery to WSF • Administer contract warranty work after delivery

Appendix 1

Legislative Expectations for Funding the New Vessel Construction Program

Dollars in Millions

	2003-05	2005-07	2007-09	2009-11	2011-13	Ten-Year Total
Sources of Funds						
Pre-existing Funds						
Bond Proceeds backed by gas tax	$0.0	$38.0	$75.0	$0.0	$0.0	$113.0
Excess of total farebox revenue, concession fees and state taxes, fees and other revenue over total operating costs (previously called "fund transfers" or "fund balance")	5.9	29.2	42.7	26.6	0.0	104.4
Other	0.0	1.0	0.0	0.0	0.0	1.0
Total Pre-Existing Funds	**$5.9**	**$68.2**	**$117.7**	**$26.6**	**$0.0**	**$218.4**
2003 Transportation Funding Package						
Bond Proceeds backed by gas tax	0.0	0.0	0.0	0.0	0.0	0.0
"Pay as You Go" Gas Tax Revenue	0.0	0.0	66.5	0.0	0.0	66.5
Total 2003 Transportation Funding Package	**$0.0**	**$0.0**	**$66.5**	**$0.0**	**$0.0**	**$66.5**
Total Sources of Funds	**$5.9**	**$68.2**	**$184.2**	**$26.6**	**$0.0**	**$284.9**
Uses of Funds						
Total Vessel Program - WSF Design, etc…	**$5.2**	**$0.8**	**$0.0**	**$0.0**	**$0.0**	**$6.0**
Design/Build/Construct						
1st Ferry Vessel	0.8	57.1	21.0	0.0	0.0	78.8
2nd Ferry Vessel	0.0	10.3	56.9	0.0	0.0	67.1
3rd Ferry Vessel	0.0	0.0	66.5	0.0	0.0	66.5
4th Ferry Vessel	0.0	0.0	39.8	26.6	0.0	66.4
Total Design/Build/Construct	**$0.8**	**$67.4**	**$184.2**	**$26.6**	**$0.0**	**$278.9**
Total Uses of Funds	**$5.9**	**$68.2**	**$184.2**	**$26.6**	**$0.0**	**$284.9**